Commentary: Are you blinking enough? – Efficacy of a software to improve blink rate in video display terminal users

Dry eye disease (DED) is an emerging health concern that is characterized by chronic ocular surface dysfunction that results from a vicious cycle of dysregulated ocular inflammation.[1] Among the wider spectrum of DED, evaporative dry eye disease (EDE) is a major issue faced by video display terminal (VDT) users as it not only affects their ocular health but also compromises their work productivity.[2] Numerous studies have shown an increased risk of DED with prolonged VDT use and screen time exposure.[3] This can be attributed to the reduction in the blink rate by 40–60% and incomplete blink amplitudes noted during VDT use.[4] This results in faster desiccation of the tear film causing an evaporative type of DED commonly referred to as the computer vision syndrome (CVS).[5] Studies have also shown that this form of EDE is estimated to increase in children as they approach adolescence, probably due to increased screen time exposures in this age group.[6]

With the advent of the digital revolution, we are becoming increasingly technology-dependent wherein VDTs find applications for both work-related and recreational activities. The COVID-19 pandemic has taken this digital surge a step further with VDTs being used as a primary modality to interact and connect with people. The confinement restrictions due to the pandemic have forced most organizations and academic institutions to invest in digital infrastructure to facilitate work from home and educational activities. It is likely that these huge investments will mandate this digital culture to become the new normal even in the post-pandemic scenario. With a culmination of all these factors and increasing screen-time exposures for individuals across all age groups, the incidence of CVS is bound to increase in the times to come.

Thus, preventive medicine needs to find greater importance as managing the sequelae and complications of chronic inflammatory diseases like DED can be extremely challenging. This can be achieved by introducing preventive ergonomic and behavioral modifications in the daily life of our patients.[7] The current study tries to look at one such behavioral intervention in alleviating symptoms of DED among VDT users. This is a single-blinded randomized controlled trial that evaluates the impact of the 'Blink' software on symptomatology and tear-film dynamics in patients with DED as compared to normal individuals.[8] Numerous studies in the past have shown favorable results with such interventions.[9] It is interesting to note that the ocular surface disease index scores and other clinical parameters tested in this study had improved as compared to baseline even within the control group who were prompted to blink just once a minute. This is an important takeaway from this paper that emphasizes the impact of blinking on tear-film dynamics. However, factors like adaptation to this behavioral modification or growing accustomed to the frequent prompting over the long term may be concerns which need to be addressed. Hence, having a frequent change in the patterns, colors, and size of the prompt displays may address these issues to some extent. Also, motivating and educating the users about the importance of compliance to these modifications remains the most vital component while enforcing such behavioral modifications. To ensure maximum benefit, it would be interesting to explore approaches to customize and calibrate the software based on devices and individual preferences.

As clinicians, we commonly encounter patients with digital eyestrain desperately looking for answers to their problems. While we strive to address the issues of these symptomatic patients, there is a large proportion of patients who have an asymptomatic form of EDE or have risk factors for developing it in the future. Thus, it is important to incorporate strategies like dry eye risk assessment and risk management in our daily practice to screen these patients and institute early therapy. Identifying those at risk for developing CVS and educating these individuals about behavioral modifications as studied by the authors can go a long way in ameliorating the burden and suffering associated with this disease.

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Conflicts of interest

There are no conflicts of interest.

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